

**AMENDMENTS TO THE CLAIMS WITH MARKINGS TO SHOW CHANGES
MADE, AND LISTING OF ALL CLAIMS WITH PROPER IDENTIFIERS**

1. – 10. (Cancelled)
11. (Currently amended) A process for the multi-layered removal of material from a work piece having an arbitrary shaped three-dimensional surface comprising the steps of:
- approximating the surface of the work piece having the arbitrary shaped three-dimensional surface through a plurality of polygons in the form of superposed polygon networks,
 - determining work areas to be machined on the three-dimensional surface of the work piece through the focal cuboid of a removal agent.
 - assigning each polygon of the polygon network to a work area, and
 - removing material in a point-wise manner from each work area by the laser, thereby generating a surface structure on the three-dimensional surface.
12. (Previously presented) The process according to claim 11, wherein the removal agent is a laser.
13. (Previously presented) The process according to claim 11, wherein the surface structure is described by at least one grey level bitmap.
14. (Previously presented) The process according to claim 13, wherein the grey level bitmap includes image spots of different grey levels or different color levels.
15. (Previously presented) The process according to claim 14, wherein a depth of the material removal is determined by one of, a brightness of the

grey level corresponding to each image spot of the grey level bit map or an intensity of the color level.

16. (Previously presented) The process according to claim 15, wherein removal of the material is carried out in a number of layers corresponding to a value of the grey level.
17. (Previously presented) The process according to claim 16, wherein each of the layers is associated with its own polygon network .
18. (Previously presented) The process according to claim 17, wherein each polygon to be manipulated in each layer does not have a border portion in common with a previously manipulated polygon.
19. (Currently amended) A process for the multi-layered removal of material from a three-dimensional surface of any shape comprising the steps of:
 - generating a three-dimensional computer model of the three-dimensional surface of the work piece described by a first polygon network;
 - providing one or more master texture bitmaps defining two-dimensional spaces; wherein three-dimensional corners of the polygons of the first polygon network correspond to two-dimensional image spots in one or more of the master texture bitmap thereby translating the polygons into the two-dimensional space of the master texture bitmap;
 - wherein the master texture bitmap comprises a plurality of image spots, each of which is defined by a grey level value corresponding to the material to be removed;
 - determining work areas to be manipulated for removal of material on the three-dimensional surface of the work piece by means of locating a work area in the focal square of a removal agent, which is a laser; wherein the work areas comprise single layers, each of the layers

describing a polygon network, such that the sum of the work areas correspond to the surface of the workpiece and the sum of the layers correspond to the surface structure of the work piece;

- wherein the surface of the work piece is approximated through superposing second polygon networks having a plurality of polygons and wherein the superposed polygon networks are offset to each other;
- assigning each polygon of each polygon network within the work area with a grey level bitmap from a parallel projection of the master texture bitmap onto the polygon within the work area, and
- removing the material by means of the laser in each layer in correspondence to the values of the grey level bitmap.

20. (Previously presented) The process according to claim 19, wherein the original computer model is derived from the description of the work piece by CAD-(spline)- surfaces, which result in an original polygon network.
21. (Previously presented) The process according to claim 19, wherein the brightness values of the grey level of the grey level bitmaps either before or during manipulation of the surface of the workpiece are computed back to the master texture bitmap.